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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/814,294

04/01/2004

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040897-0114

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EXAMINER

WON, BUMSUK

ART UNIT

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2879

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/814,294	Applicant(s) THURK, PAUL	
	Examiner Bumsuk Won	Art Unit 2879	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 July 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 42,62-66 and 71-90 is/are pending in the application.
- 4a) Of the above claim(s) 77-90 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 42,62-66 and 71-76 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/24/2007 has been entered.

### ***Election/Restrictions***

Newly submitted claims 77-90 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Claims 42, 62-66, and 71-76 are related to a generic method of making a subassembly for a light emitting panel having a group IV nanoparticles being used as a light emitting layer, whereas the newly submitted claims 77-90 are directed to a method of making a subassembly for a light emitting panel having specific light emitting layer forming method with specific binder and solvent materials that are independent from using group IV nanoparticles being used as a light emitting layer. Therefore, the examiner will examine claims 42, 62-66, and 71-76.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 77-90 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Response to Arguments***

Applicant's arguments with respect to claims 42 and 71 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 42 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dutta (US 2003/0047816) in view of Mikhael (US 2003/0080677).**

**Regarding claim 42,** Dutta discloses a method of making a light emitting subassembly (figure 5) comprising combining a light emitting layer (51) comprising light emitting group IV nanoparticles (paragraph 82), first electrode layer (52, 58), second electrode layer (56, 57), and first insulation layer (55), wherein the light emitting layer and the electrode layers are formed on the first insulation layer, and wherein the light emitting layer is formed on the first electrode layer by printing an ink comprising the light emitting group IV nanoparticles, a binder and a solvent onto the first electrode layer (paragraph 35 and 61).

Dutta does not disclose the first insulation layer and the first electrode being transparent and a second insulation layer.

Mikhael discloses a method of making a light emitting subassembly (figure 2) having a transparent first insulation layer and a transparent electrode (paragraph 26), and a second insulation layer (44), for the purpose of protecting the light emitting subassembly.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a first insulation layer being transparent and a second insulation layer as disclosed by Mikhael in the method disclosed by Dutta, for the purpose of protecting the light emitting subassembly.

**Regarding claim 71**, Dutta discloses a method of making a light emitting subassembly (figure 5) comprising: selecting a first insulating substrate material (55), selecting a first electrode material (52) and a second electrode material (56); printing an ink comprising the light emitting group IV nanoparticles, a binder and a solvent onto the first electrode material to form a light emitting layer (paragraphs 35 and 61) disposed between the first and the second electrode materials, wherein the first electrode material is laminally disposed on the first insulating substrate (55).

Dutta does not disclose the first insulating substrate and the first electrode being transparent and a second insulation layer.

Mikhael discloses a method of making a light emitting subassembly (figure 2) having a transparent first insulation substrate and transparent first electrode (paragraph 26) and a second insulation layer (44), for the purpose of protecting the light emitting subassembly.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a first insulation layer being transparent and a second insulation layer as

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disclosed by Mikhael in the method disclosed by Dutta, for the purpose of protecting the light emitting subassembly.

**Claims 62-66 and 72-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dutta (US 2003/0047816) in view of Mikhael (US 2003/0080677), in further view of Korgel (US 6,918,946).**

**Regarding claim 62**, Dutta in view of Mikhael discloses all the claim limitation except for the nanoparticles being Si nanoparticles.

Korgel discloses a method of making a light emitting subassembly having light emitting layer being Si nanoparticles (paragraph 105), for the purpose of enhancing light emissivity.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to having Si nanoparticles for a light emitting layer as disclosed by Korgel in the method disclosed by Dutta in view of Mikhael, for the purpose of enhancing light emissivity.

**Regarding claims 65 and 66**, Korgel discloses the group IV nanoparticles are core-shell nanoparticles comprising silicon (paragraph 105). The reason for combining is the same as for claim 62 above.

**Regarding claim 63**, Korgel discloses the group IV nanoparticles are Ge nanoparticles (paragraph 126). The reason for combining is the same as for claim 62 above.

**Regarding claim 64**, Korgel discloses the group IV nanoparticles are Si-Ge alloy nanoparticles (paragraph 118). The reason for combining is the same as for claim 62 above.

**Regarding claim 72**, Dutta in view of Mikhael discloses all the claim limitation except for the nanoparticles being Si nanoparticles.

Korgel discloses a method of making a light emitting subassembly having light emitting layer being Si nanoparticles (paragraph 105), for the purpose of enhancing light emissivity.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to having Si nanoparticles for a light emitting layer as disclosed by Korgel in the method disclosed by Dutta in view of Mikhael, for the purpose of enhancing light emissivity.

**Regarding claims 75 and 76**, Korgel discloses the group IV nanoparticles are core-shell nanoparticles comprising silicon (paragraph 105). The reason for combining is the same as for claim 72 above.

**Regarding claim 73**, Korgel discloses the group IV nanoparticles are Ge nanoparticles (paragraph 126). The reason for combining is the same as for claim 72 above.

**Regarding claim 74**, Korgel discloses the group IV nanoparticles are Si-Ge alloy nanoparticles (paragraph 118). The reason for combining is the same as for claim 72 above.

#### ***Contact information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bumsuk Won whose telephone number is 571-272-2713. The examiner can normally be reached on Monday through Friday, 8:00 am to 5:00 pm.

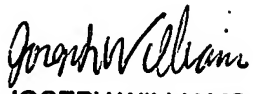
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bumsuk Won/

Patent Examiner, Art Unit 2879

  
**JOSEPH WILLIAMS**  
**PRIMARY EXAMINER**